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1978
Roadside Vehicle Inspections

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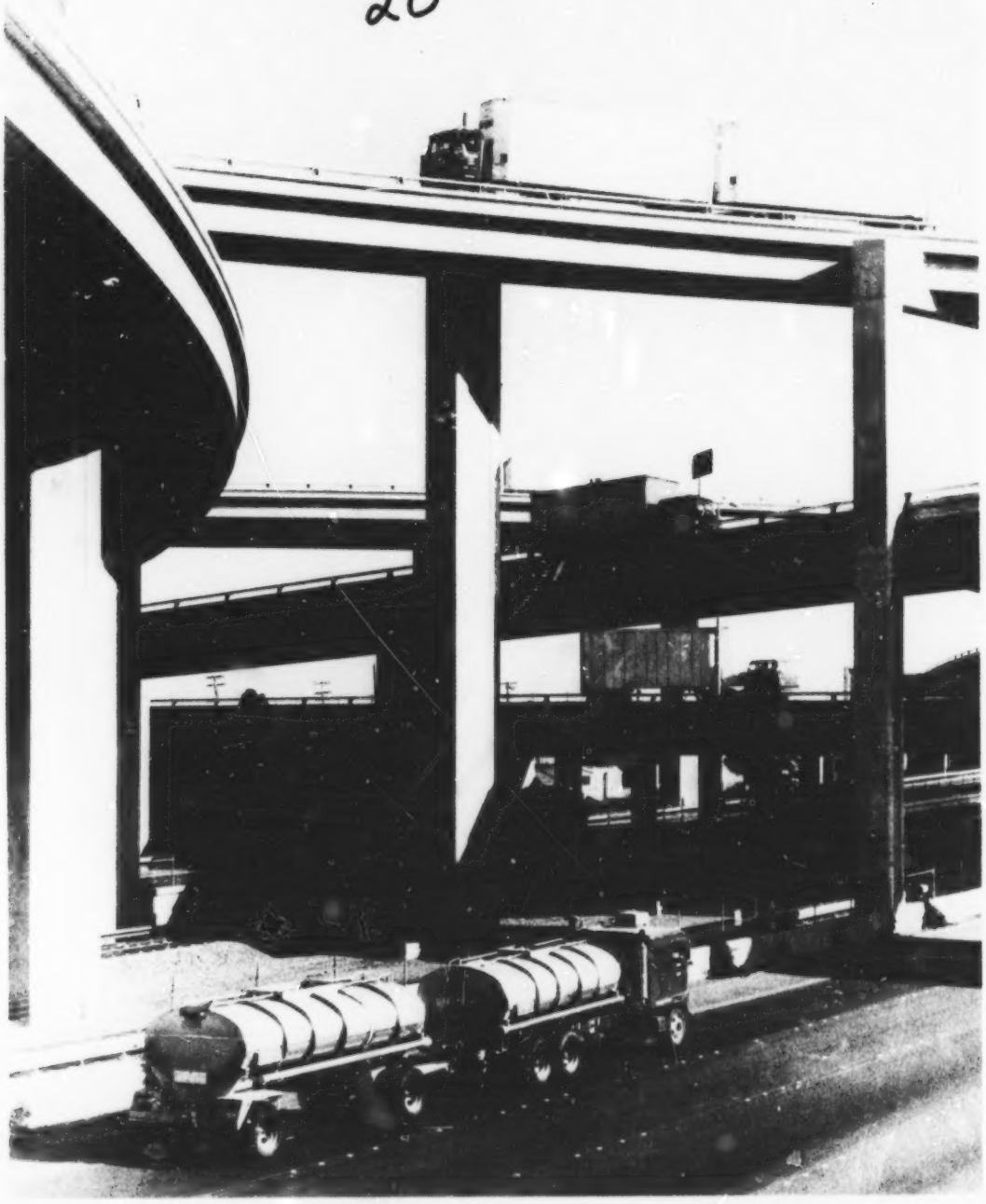

U.S. Department of Transportation
Federal Highway Administration
Bureau of Motor Carrier Safety

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FOREWORD

The safety inspection of vehicles and drivers, conducted during periods when actual highway transportation operations are underway, is one of the activities of the Federal Highway Administration's Bureau of Motor Carrier Safety intended to increase the safety of interstate commercial motor vehicle transportation on the Nation's highways.

This report is a compilation of the results of the Bureau's roadside vehicle inspection activities conducted at various locations throughout the country during calendar year 1978.

INTRODUCTION

The Federal Motor Carrier Safety Regulations (FMCSR) and the Hazardous Materials Regulations (HMR) are applicable to the transportation operations of motor carriers of passengers or property engaged in interstate or foreign commerce. The Regulations are designed to promote public safety by minimizing the risks associated with these transportation operations and thus contribute to efforts to reduce highway accidents.

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The Federal roadside safety inspection program is designed to identify vehicle defects and driver conditions which could cause accidents, and to remove vehicles and drivers (that are deemed imminently hazardous) from the highways.

Roadside vehicle/driver safety inspections may be conducted by one Federal Motor Carrier Safety Investigator working with State authorities, or the inspections may be on a larger scale, with several Federal and State personnel working in one or more locations. Occasionally, other elements of the Department of Transportation as well as other Federal agencies participate -- such as the Department of Defense, the U.S. Coast Guard, the Federal Bureau of Investigation, the Nuclear Regulatory Commission, and the U.S. Customs Service.1/

Vehicles may be inspected on either a selective or random basis. The selective method involves a visible and audible prescreening by the Federal inspector to determine if there are obvious signs of defects. If during this cursory examination a deficiency is noted, a thorough inspection of the vehicle and driver documentation is performed.

1/ Certain vehicles and drivers, because of either the type(s) of cargos or area of operations are exempted from certain Federal safety requirements; e.g. "exempt intracity" operations.

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The selective prescreening inspection procedure is intended to identify as many defective vehicles as possible during the inspection period. The prescreening inspection procedure is not intended to produce statistically valid measurements about the number or percent of defective vehicles on the highway.

Vehicles may also be inspected on a random basis to provide statistically valid data for use in determining Federal Motor Carrier Safety Program emphasis areas, and for statistical reports. Inspectors are instructed to perform thorough inspections on vehicles in accordance with a preplanned vehicle selection procedure designed to insure that the vehicles are selected on a random basis.

Regardless of the selection procedure used, vehicles found to have defects sufficient to warrant being classified as imminently hazardous to public safety on the highway are declared out-of-service, and may not be operated until the serious defects have been repaired.

If a vehicle is inspected and found to have lesser defects that are not imminently hazardous, those defects are noted on the inspection report and may be repaired as soon as possible away from the inspection site.

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In addition to the inspection of the vehicle, the required credentials and documents of the driver are also inspected, Most 2/ drivers are required by Federal regulation to have a valid operating license issued by the State authority, a valid medical certificate, and a current driver's daily log.

The driver's log contains entries showing the number of hours worked, the types of duties performed, the mileage traveled, and other identifying information. The purpose of the daily log is to assure compliance with Federal regulations limiting the driver's hours of service, and to reduce the risk of accident involvement due to excessive hours on duty or driving.

Drivers who are found to be in violation of Federal hours of service limitations at the time of the roadside inspection are placed out-of-service.

In all cases where the inspection report notes defects or driver violations, the motor carrier is required to certify within 15 days to the Bureau of Motor Carrier Safety that the defects have been corrected.

2/ Drivers operating in "exempt intracity" operations or who are driving vehicles with a gross weight of not more than 10,000 pounds and not more than two axles are exempt from some or all of these requirements.

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1978 ANNUAL REPORT

The Bureau of Motor Carrier Safety (BMCS), in continuing its effort to improve highway safety, conducted 27,601 roadside vehicle inspections during calendar year 1978. The total number of vehicles inspected during this period represents an increase of 87 percent over calendar year 1976, and an increase of 50 percent over the number of inspections performed in calendar 1977.

All vehicles inspected during 1978 were selected for inspection using the selective prescreening procedure.

PART I

INSPECTIONS OF INTERSTATE PROPERTY CARRIERS-TRUCKS

Ninety-four percent (25,965) of all vehicles inspected were operated either by for-hire or private carriers of property.

For-hire carriers of property are classified into two types, "authorized" and "exempt." Authorized carriers are those who perform transportation services authorized by a certificate or permit issued by the Interstate Commerce Commission (ICC).

Exempt carriers are those who transport for hire those commodities that are exempt from ICC economic regulations. In most cases these commodities are agricultural products, including produce, livestock, and grain.

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Private carriers of property are those who engage in transportation as an adjunct to another business enterprise.

An additional classification of carriers, "other," used in the report includes those transporting the mails operating under contract with the U.S. Postal Service, carriers in foreign commerce, and carriers whose classification was unknown at the time of the inspection.

DISTRIBUTION OF OUT-OF-SERVICE DEFECTS BY CARRIER TYPE

Of the total 25,965 property carrying vehicles inspected, 10,423 (40%) were found to have one or more serious mechanical defects which resulted in the vehicle being marked and declared out-of-service by the BMCS inspector.

Table One displays the distribution of the out-of-service actions by carrier type, and the average number of defects per vehicle.

TABLE ONE - OUT-OF-SERVICE ACTIONS BY CARRIER TYPE

Carrier Type	Total Vehicles Inspected	Total Out of Service	Average Number of Defects Per Vehicle
Authorized	11,424	4,805	3.37
Private	9,990	3,667	3.38
Exempt	1,871	809	3.85
Other	2,680	1,142	3.86

The average number of defects discovered per vehicle inspection in calendar 1978 was 3.46. In calendar 1976 the average number of defects discovered per vehicle was 3.23, and in calendar 1977 the average number of defects per vehicle was 3.31.

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DEFECTS DISCOVERED BY TYPE AND BY CLASSIFICATION OF CARRIER

The 25,965 property carrying vehicle inspections disclosed a total of 89,998 defects, 16,226 of which are classified as being imminently hazardous and out-of-service.

The greatest number (36,38[illegible] of defects discovered was in the lighting/electrical systems of these vehicles, and 2,191 (6%) of these lighting/electrical defects were serious enough to cause the vehicle to be placed out of service.

The largest number of out-of-service defects was found in the vehicles' service brake systems. Of the total of 17,293 defects discovered in the service brake systems, 8,128 (47%) were out-of-service.

The largest percentage of out-of-service defects within the service brakes related to brake hoses or lines (33%), followed by inoperative brake energy warning devices (21%), leaking brake chambers (10%), and cracked brake drums (4%).

Table Two shows the distribution of the out-of-service and less serious defects by defect type and carrier classification.

Table Two - Distribution of Defects by Type and Carrier Classification

Description of Violations	All Carriers		Authorized		Private		Exempt		Other	
	Total	Out of Service	Total	Out of Service	Total	Out of Service	Total	Out-of Service	Total	Out-of Service
Coupling Devices	397	54	175	23	171	23	26	5	25	3
Emergency Equipment	8,539	---	2,859	---	3,814	---	760	---	1,106	---
Exhaust System	1,830	715	1,007	400	519	206	106	29	198	80
Frames	206	32	102	18	65	6	12	---	27	8
Fuel System	706	345	311	151	256	123	40	19	99	52
Glazing/Windows	1,916	---	844	---	630	---	214	---	228	---
Hazardous Materials	3,691	315	1,473	143	1,831	135	46	10	341	27
Lighting/Electrical	36,285	2,191	14,670	889	14,901	837	2,891	187	3,823	278
Other Parts/Accessories 1/	4,293	388	1,946	239	1,265	48	381	24	701	77
Parking Brake	488	237	185	71	220	126	31	16	52	24
Power Source	1,551	208 2/	827	105	417	61	107	14	200	28
Restraints 3/	318	135	111	40	152	75	19	6	36	14
Service Brakes	17,293	8,128	8,315	3,811	5,684	2,704	1,277	621	2,017	992
Steering System	671	231	322	114	194	62	47	22	108	33
Steering Axle Tires	284	57	115	24	93	14	29	6	47	13
Suspension System	1,967	635	864	285	674	206	192	75	237	69
Tires-Non Steering Axle	4,476	1,474	2,136	710	1,356	440	413	123	571	201
Wheels	5,087	1,081	2,297	492	1,620	344	624	134	546	111
TOTAL	89,998	16,226	38,559	7,715	33,862	5,410	7,215	1,291	10,362	2,010

1/ Other Parts/Accessories include speedometer, horn, defrosters, mirrors, seat belt installation, windshield wipers.

2/ Engine of vehicle unable to start without external assistance.

3/ Restraints: Cargo Restraints including front end structure, tie-down assemblies, and blocking/bracing.

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PART II

INSPECTION OF INTERSTATE PASSENGER CARRIERS - BUSES

Six percent (1,636) of the vehicles inspected were operated by carriers of passengers.

Passenger carriers are classified into two types, "authorized" and "exempt." As is the case with property carrying vehicles, authorized passenger carriers are those who perform a for-hire service authorized by a certificate or permit issued by the ICC.

Exempt or other carriers of passengers are those performing a for-hire service which is exempted from requirements relating to operating authority by certain parts of the Interstate Commerce Act, and those whose classification was unknown at the time of the inspection.

DISTRIBUTION OF OUT-OF-SERVICE DEFECTS BY CARRIER TYPES

Table Three displays the distribution of out-of-service actions by carrier type and the average number of defects per vehicle.

TABLE THREE - OUT-OF-SERVICE ACTIONS BY CARRIER TYPE

Carrier Type	Total Vehicles Inspected	Total Out of Service	Average Number of Defects per Vehicle
Authorized	1,398	122	0.79
Exempt/Other	238	26	1.06

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The average number of defects discovered per vehicle inspection in calendar 1978 was 0.83. In calendar 1976 the average number of defects was 0.96, and in calendar year 1977 the average number of defects per vehicle was 1.08.

Table Four shows the distribution of the out of service and less serious defects by defect type and carrier classification.

TABLE FOUR - DISTRIBUTION OF DEFECTS BY TYPE AND CARRIER CLASSIFICATION

Description of Violations	All Carriers Total	All Carriers Out of Service	Authorized Total	Authorized Out of Service	Exempt & Other Total	Exempt & Other Out of Service
Parking Brakes	4	3	3	2	1	1
Service Brakes	157	84	138	71	19	13
Bus Requirements 1/	249	1	178	1	71	--
Emergency Equipment	168	--	128	--	40	--
Exhaust System	13	11	11	9	2	2
Fuel System	3	1	2	--	1	1
Window Construction	119	--	107	--	12	--
Hazardous Materials	1	--	1	--	--	--
Lighting/Electrical	414	7	354	6	60	1
Power Source	19	7 2/	14	6	5	1
Steering System	4	1	2	--	2	1
Suspension	5	4	5	4	--	--
Tires - Non Steering Axle	46	4	36	4	10	--
Tires - Steering Axle	6	1	5	1	1	--
Wheels	80	14	61	14	19	--
Other Parts/Accessories 3/	73	4	63	4	10	--
TOTAL	1,361	142	1,108	122	253	20

1/ Bus Requirements include standee line, notices to passengers, and light on emergency door.

2/ Engine of vehicle unable to start without external assistance.

3/ Other Parts/Accessories include speedometer, horn, defrosters, mirrors, seat belt installation for the driver, and windshield wipers.

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PART III

DRIVER VIOLATIONS

Inspection of the property and passenger carriers' drivers during calendar year 1978 disclosed 24,481 violations of the FMCSR. The largest percentage of the violations (52%) related to failure to comply with one or more of the requirements of Part 395 of the FMCSR, Hours of Service of Drivers.

The largest single type of hours of service violation was the failure to maintain a driver's daily log (4,627 violations), followed by failure to have a current daily log (3,521 violations), and "other" log violations such as incomplete entries and failure to have the previous 30 days' logs in possession.

Although private carriers of property accounted for only 36 percent of the total number of vehicles inspected (FMCSR administered by BMCS are not applicable to private carriers of passengers), 47 percent of the total driver violations discovered are attributed to drivers of private property carrying vehicles. In addition, these drivers accounted for 56 percent of the most frequently found violation -- failing to maintain a driver's daily log.

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Examination of drivers' daily logs for the 30 days prior to the time of the inspection disclosed 2,117 instances where the driver had violated Federal regulations which prescribe the maximum number of hours drivers may drive or remain on duty. Of the total number of hours of service violations, 1,522 instances had occurred on tours of duty prior to that during which the inspection was performed.

Twenty-eight percent (595) of the drivers who had violated the Hours of Service Regulations were discovered to be operating vehicles in excess of the maximum number of hours permitted at the time of the inspection and were consequently placed out-of-service by the BMCS investigator at the time and place of the inspection.

Table Five shows the distribution of driver violations by type and carrier classification.

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Table Five- Driver Violations by Violation Type and Carrier Classification

Description of Violations	All Drivers		Authorized		Private		Exempt		Other	
	Total	Out of Service	Total	Out of Service	Total	Out of Service	Total	Out of Service	Total	Out of Service
10 Hours	1,281	278	441	118	512	91	189	50	139	19
15 Hours	425	108	139	35	219	50	40	17	27	6
60 Hours	51	15	14	6	28	9	3	--	6	--
70 Hours	360	194	140	77	141	73	48	26	31	18
No Logs	4,627	--	924	--	2,626	--	516	--	561	--
Logs not Current	3,521	--	1,861	--	1,044	--	290	--	326	--
False Log Entries	328	--	170	--	88	--	33	--	37	--
Other Log Violations[1/]	2,336	--	781	--	1,000	--	246	--	309	--
Medical Certificate Violations	5,761	--	923	--	3,546	--	540	--	752	--
Other Driver Violations[2/]	5,791	--	2,122	--	2,513	--	518	--	638	--
TOTAL	24,481	595	7,515	236	11,717	223	2,423	93	2,826	43

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1/ Other log violations include failure to prepare logs in the form and manner prescribed and failure to have previous 30 days' logs in possession at time of inspection.

2/ Other driver violations include failure to use seat belts, transportation of unauthorized passengers, and failure to comply with State and local driving laws.

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PART IV

VEHICLE DEFECTS AND ACCIDENT INVOLVEMENT

Motor carriers of passengers and property are required by the FMCSR to report to BMCS those accidents which resulted in:

A. Estimated property damage to the vehicles, cargo, and fixed objects of $2,000 or more, or

B. A personal injury, or

C. The death of any person.

In calendar year 1978, 1,597 accidents were reported to BMCS as having occurred as a result of a mechanical defect or failure.

Of the 1,597 accidents involving mechanical defects reported in 1978, those defects cited most often were defects in the brake system (496 or 31 %), followed by tires (429 or 27%), steering (83 or 5%), wheels (82 or 5%), and coupling devices (80 or 5%).

In 1978, those accidents attributed to mechanical defects resulted in 124 fatalities, 1,305 injuries, and $19,983,560 in property damage.

Inspection of commercial vehicles in operation during calendar year 1978 showed that the five most common mechanical defects which caused accidents during that year (brakes, tires, steering,

wheels, and coupling devices) accounted for 31 percent of the total number of defects discovered during BMCS roadside inspections, and resulted in 70 percent of the total number of out-of-service actions taken by BMCS staff members to remove defective vehicles from the highways.

PART V

CONCLUSION

Since 1975 the percentage of vehicles inspected by the BMCS and found to have imminently hazardous mechanical defects has increased approximately 3 percent per year.

The majority of these serious defects can be readily detected by visual/audible inspection, and the elimination of these defects can have an appreciable impact on the Federal effort to reduce commercial vehicle accidents.

In addition to a commitment to increase the Federal inspections of commercial vehicles in operation during 1979, BMCS recently instituted rulemaking to revise the Federal Safety Regulations to address commercial vehicle drivers' failure to prepare logs and inadequate inspection, repair, and maintenance procedures.

The largest single violation on the part of commercial vehicle drivers is the failure to maintain a driver's daily log.

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The failure to maintain this record of a driver's hours of service enables those drivers who are operating in excess of the maximum number of hours permitted to defeat attempts by Federal inspectors to determine the actual hours of service of the driver.

Effective June 18, 1979, all drivers who are required to prepare logs will be placed out-of-service for a minimum of eight hours if a currently - maintained driver's log is not available for inspection during the course of Federal driver-vehicle road-side checks.

The present hours of service limitations contained in the Federal Regulations have been the subject of extended analysis and seven public hearings held in major cities throughout the United States. The next step in the rulemaking process, the publication of a Notice of Proposed Rulemaking, is planned for the Fall of 1980.

In addition to making the hours of service rules more effective, Part 396 of the Federal Motor Carrier Safety Regulations relating to the inspection, repair, and maintenance of interstate commercial vehicles has been extensively revised to insure more adequate inspection and maintenance procedures. This revision of the Regulations will become effective on April 1, 1980.

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The Bureau of Motor Carrier Safety intends to continue its efforts in deterring poorly maintained vehicles and fatigued drivers from travelling the highways by expanded safety program monitoring, increased enforcement, and the training of State personnel in inspection procedures.

Approved for release and publication this 29th day of November, 1979.

Robert A. Kaye
Director

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